



DUR-4047

WIRELESS ADDRESSABLE MULTI-STATE OPTICAL SMOKE DETECTOR

Overview

The DUR-4047 processor based optical smoke detector is designed for detection of a smoke accompanying an early stage of an open fire ignition. It enables detection of a fire at its beginning stage when material starts to smoulder, therefore a long time prior to the appearance of an open flame and a noticeable rise of temperature.

The DUR-4047 is an analogue detector with automatic sensitivity self-compensation that maintains constant sensitivity during progressing dirt build-up in the measuring chamber and also during changes of air pressure and temperature.

The DUR-4047 may be operating with the POLON 4000 and POLON 6000 fire alarm system detection through wireless ACR-4001 adapter. The smoke detectors are equipped with a battery power supply.

Principles of operation

The DUR-4047 is a Tyndall effect optical smoke detector. Its operation is based on the measuring of infrared (IR) radiation scattered by smoke particles. An optical module, consists of an electroluminescence diode emitting infrared (IR) radiation and a photodiode acting as the receiver of the radiation. The optical module is protected by a labyrinth, isolating both external light and direct light from the emitting diode. When smoke particles enter the optical module area, infrared radiation scatters on smoke particles. Part of this scattered radiation reaches the photodiode triggering an alarm signal that is sent through the wireless ACR-4001 adapter to the supervising control panel.

The DUR-4047 detector contains self-compensation circuits, which maintain constant sensitivity during progressing dirt build-up inside the optical chamber. After exceeding the threshold of dirt build-up, the detector emits a fault signal denoting the necessity for servicing without losing the ability to detect fire.

The applied built-in microprocessor element and the proper detector software guarantee that the entire phenomenon accompanying a fire within the vicinity of the detector will be analysed quickly and false alarms will be eliminated.

Detectors using the wireless ACR-4001 adapter transmits (into the detection loop) information about the servicing mode, a fault of internal circuits or battery discharge. The alarm mode is indicated by a flashing red LED diode. The fault status of the detector, service alarm, and operation of the short circuit isolator are indicated by the same (double colour) LED diode flashing a yellow light.

The DUR-4047 detectors can be programmed to appropriate sensitivity in three modes: normal, increased, and decreased level. This makes it possible to adapt the detectors to specific conditions during operation in the protected area.

Coding of the detector address can be done automatically at the control panel level – the address code is saved in its non-volatile memory.

Communication between the POLON 4000 system control panel and POLON 6000 system control panel and the DUR-4047 detector is carried out through the detector's wireless ACR-4001 adapter. The detector communicates with the adapter using the radio protocol with confirmation and a possibility of changing the radio channel. During operation, radio interferences are monitored and in an event of an occurrence of an interference the radio channel is changed, which allows further, uninterrupted operation of the detectors.

They are mounted on the non-addressable G-40 bases which is not equipped without any connectors. This special version of base is provided together with a detector DUR-4047.

The DUR-4047 detectors meet the requirements of the PN-EN 54-7 European standard.

Technical specifications

Battery supply	2 baterie litowe CR123
Supply voltage	3 V
Max. quiescent current	< 80 μ A
Max. current consumption during an alarm or fault	< 1 mA
Radio frequency operating range	863-870 MHz
Distance from adapter – depending on muffling by the environment	up to 100 m
Type of radio communication	multi-channel with confirmation
Quiescent operating time	3 years
Number of programmable sensitivity levels	3
Detectable test fire	from TF1 to TF5 and TF8
Programming of detector address	from the control panel level
Operation temperature range from	-25 °C up to +55 °C
Dimensions (with base)	\varnothing 115 x 54 mm
Mass	0,2 kg